THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 23

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte YOSHIHIKO AIHARA, TADAAKI ISOZAKI,
NORIKO YAMAKAWA and ICHIRO KAWAMURA

Appeal No. 95-4830
Application 07/899,361[1]

ON BRIEF

Before DOWNEY, WARREN and OWENS, *Administrative Patent Judges*.

OWENS, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal from the examiner's final rejection of

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[1] Application for patent filed June 16, 1992. According to appellants, the application is a continuation-in-part of Application 07/863,316, filed April 1, 1992, now abandoned, which is a continuation of Application 07/736,596, filed July 26, 1991, now abandoned.

claims 1 and 2, which are all of the claims in the application. Claim 1 is illustrative and is appended to this decision.

THE REFERENCES

Reference relied upon by the examiner

Suzuki et al. (Suzuki)	4,973,738	Nov. 27, 1990

Additional reference relied upon by the board

Hopf et al. (Hopf)	5,075,032	Dec. 24, 1991 (parent filed May 13, 1987)

THE REJECTION

Claims 1 and 2 stand rejected under 35 U.S.C. § 103 as being unpatentable over Suzuki.

OPINION

We have carefully considered all of the arguments advanced by appellants and the examiner and agree with appellants that the aforementioned rejection is not well founded. Accordingly, this rejection will be reversed. Under the provisions of 37 CFR § 1.196(b), we will introduce a new ground of rejection of claims 1 and 2.

Suzuki discloses (col. 2, lines 34, 44-47 and 67; col. 7, lines 35-43) a liquid crystal compound which differs from that

recited in appellants' claims 1 and 2 only in that in the terminal ester group shown at the left in each compound, the positions of the carbonyl and oxygen in Suzuki's ester are reversed relative to the structure in appellants' claim 1. That is, Suzuki discloses a terminal alkyloxycarbonyl group, whereas the compound recited in appellants' claim 1 has a terminal alkanoyloxy group.

The examiner argues that in the original parent case, appellants claimed both compounds having R-COO- and R-OCO- terminal ester groups, and therefore presented them as equivalents (answer, page 5).[2] Also, the examiner argues, appellants' specification teaches that both terminal ester groups are capable of performing the same tasks. *See id*. The examiner states that she cannot understand how the compounds now can differ just because only one of them now is claimed. *See id*.

The deficiency in the examiner's argument is that she relies only upon appellants' disclosure for the functional

[2] In the examiner's answer, only page 7 is numbered. The numbers referred to herein of the other pages are those which should have been assigned to those pages.

equivalence of the R-COO- and R-OCO- terminal ester groups. Actual functional equivalence is not enough to justify refusal of a patent to a compound having one of the terminal ester groups when a compound having the other of the terminal ester groups is disclosed in the prior art. *See In re Ruff*, 256 F.2d 590, 599, 118 USPQ 340, 348 (CCPA 1958). The functional equivalence must be disclosed in, or have been obvious to one of ordinary skill in the art in view of, the prior art. *See id*. Appellants' disclosure "may not be used against them as prior art absent some admission that matter disclosed in the specification is in the prior art." *In re Wertheim*, 541 F.2d 257, 269, 191 USPQ 90, 102 (CCPA 1976). The examiner has not shown, and we do not independently find, where appellants have made such an admission.

The examiner argues that Suzuki teaches tri-stable states (answer, page 7). Suzuki shows tri-stable phases (Fig. 7, 8D). The examiner's argument, however, is deficient because the examiner has not explained why Suzuki would have fairly suggested, to one of ordinary skill in the art, compounds having an R-COO- terminal ester group.

For the above reasons, we conclude that the examiner has not carried her burden of establishing a *prima facie* case of obviousness of appellants' claimed invention. The rejection of appellants' claims 1 and 2 under 35 U.S.C. § 103 over Suzuki therefore is reversed.

Under the provisions of 37 CFR § 1.196(b), we enter the following new ground of rejection.

Claims 1 and 2 are rejected under 35 U.S.C. § 103 over Suzuki in view of Hopf.

Suzuki discloses a liquid crystal compound (col. 7, lines 37-43) which differs from that recited in appellants' claim 1 only in that the terminal ester radical shown at the left in Suzuki's compound is alkoxycarbonyl, whereas that in appellants' claim 1 is alkanoyloxy. However, Hopf discloses a liquid crystal compound of the formula R^1-Q^1-A-$(Q^2)_q$-R^2, wherein R^1 can be, *inter alia*, an alkanoyloxy group (R-COO-) or an alkoxycarbonyl group (R-OCO-) having 1 to 15 carbon atoms, Q^1 can be, *inter alia*, A^o-Z^o where A^o is 1,4-phenylene and Z^o is

-COO- or -OCO-, A can be, *inter alia*, tetralin or 1,2,3,4-tetrahydrophenanthrene, q can be either zero or 1, and R^2 can be, *inter alia*, an alkyl group having 1 to 15 carbon atoms, wherein one or more CH_2 groups are replaced by a group from a list including -CHhalogen-, -O-CO- and -CO-O- (col. 1, line 6 - col. 3, line 38). In our view, such a Hopf compound is sufficiently similar to that of Suzuki that one of ordinary skill in the art would have expected Hopf's -O-CO- and -CO-O- terminal esters to be interchangeable not only in Hopf's compound, but also in that of Suzuki. Thus, one of ordinary skill in the art would have been motivated to use either of these terminal esters in the Suzuki liquid crystal compound and would have had a reasonable expectation of success in doing so. Accordingly, use of a terminal alkanoyloxy group instead of a terminal alkoxycarbonyl group in Suzuki's compound would have been *prima facie* obvious to one of ordinary skill in the art in view of Hopf. *See In re Vaeck*, 947 F.2d 488, 493, 20 USPQ2d 1438, 1442 (Fed. Cir. 1991); *In re O'Farrell*, 853 F.2d 894, 902, 7 USPQ2d 1673, 1680 (Fed. Cir. 1988); *In re Longi*, 759 F.2d 887, 892-93, 225 USPQ 645,

648 (Fed. Cir. 1985).

Regarding appellants' claim 2, Suzuki teaches that X can be either -COO- or -OCO- (col. 2, lines 44-48).

Appellants argue that Table 2 of their specification shows that appellants' claimed invention produces a surprising improvement in a significant property, i.e., response time (brief, page 13). Appellants state that since they claim both configurations of the internal ester, the important issue is whether the orientation of the terminal ester recited in their claim 1 unexpectedly improves response time (brief, pages 11 and 13).

Appellants argue that appellants' Table 2 shows that in one of six tests, appellants' compound had a response time which was only 80% as fast as that of Suzuki, whereas in the other five tests, the response times of appellants' compositions were faster by factors of 1.6, 1.7, 3.4, 4.3 and 9.9 (brief, page 12). For the following reasons, we do not find this argument to be convincing.

First, it is not enough for appellant to show that the results for appellant's invention and the comparative examples differ. The difference must be shown to be an unexpected

difference. *See In re Freeman*, 474 F.2d 1318, 1324, 177 USPQ 139, 143 (CCPA 1973); *In re Klosak*, 455 F.2d 1077, 1080, 173 USPQ 14, 16 (CCPA 1972). Appellants merely provide attorney argument that their Table 2 shows unexpected results, and arguments of counsel cannot take the place of evidence. *See In re De Blauwe*, 736 F.2d 699, 705, 222 USPQ 191, 196 (Fed. Cir. 1984); *In re Payne*, 606 F.2d 303, 315, 203 USPQ 245, 256 (CCPA 1979); *In re Greenfield*, 571 F.2d 1185, 1189, 197 USPQ 227, 230 (CCPA 1978); *In re Pearson*, 494 F.2d 1399, 1405, 181 USPQ 641, 646 (CCPA 1974). In their specification (page 39, lines 5-6), appellants state that of the compounds whose test results are shown in their Table 2, i.e., the compounds in Examples 6 and 7, which are compounds of appellants' invention, and the compounds of Examples 8 and 9, which are within the scope of Suzuki, "the compound in Example 6 is the most preferable."[3] This statement does not indicate that the

[3] Appellants' specification includes numerous amendments which were entered from an amendment filed on June 9, 1993 (paper no. 6). These amendments were canceled by an amendment filed on January 24, 1994 (paper no. 10). The examiner wrote "please enter" and her initials in the margin on the first page of the latter amendment, but this amendment has not been entered clerically. In this opinion, we refer to appellants'

difference between this compound and those of Suzuki is an unexpected difference but, rather, indicates that the difference is merely an expected difference of degree.

Second, the evidence presented in the declaration is not commensurate in scope with the claims. *See In re Grasselli*, 713 F.2d 731, 743, 218 USPQ 769, 778 (Fed. Cir. 1983); *In re Clemens*, 622 F.2d 1029, 1035, 206 USPQ 289, 296 (CCPA 1980). Appellants' claim 1 encompasses R_1 having 5-18 carbon atoms and R_2 having 6-16 carbon atoms, and Suzuki discloses an R_1 having 1-20 carbon atoms and an R_2 having 4-14 carbon atoms (col. 2, lines 19-44). However, in appellants' Table 2, only one R_1, having 8 carbon atoms, and one R_2, having 6 carbon atoms, are used. We find in the evidence of record no reasonable basis for concluding that the great number of materials encompassed by appellant's claims would behave as a class in the same manner as the particular materials tested. *See In re Lindner*, 457 F.2d 506, 508, 173 USPQ 356, 358 (CCPA 1972); *In re Susi*, 440 F.2d 442, 445-46, 169 USPQ 423, 426

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specification as it appeared prior to the June 9, 1993 amendment.

(CCPA 1971).

Appellants argue that the declaration of Okabe filed on January 24, 1994 (paper no. 8) shows that the compounds of appellants' claimed invention, but not those of Suzuki, show a tristable S*(3) phase in both heating and cooling cycles (brief, pages 13-15). For the following reasons, we are not persuaded by this argument.

First, the declaration shows a difference between appellants' claimed compounds and those of Suzuki, but appellants have provided no evidence that such a difference would have been unexpected by one of ordinary skill in the art. *See Freeman*, 474 F.2d at 1324, 177 USPQ at 143; *Klosak*, 455 F.2d at 1080, 173 USPQ at 16. Appellants merely provide attorney argument that an unexpected result is produced, and such arguments of counsel cannot take the place of evidence. *See De Blauwe*, 736 F.2d at 705, 222 USPQ at 196; *Payne*, 606 F.2d at 315, 203 USPQ at 256; *Greenfield*, 571 F.2d at 1189, 197 USPQ at 230; *Pearson*, 494 F.2d at 1405, 181 USPQ at 646.

Second, in the comparison between Experiment 1 and Experiment 3, both the internal and external esters are

reversed. Thus, the cause-and-effect relationship which appellants desire to show between terminal ester configuration and existence of a tristable S*(3) phase upon heating is lost in multiple unfixed variables. *See In re Heyna*, 360 F.2d 222, 228, 149 USPQ 692, 697 (CCPA 1966); *In re Dunn*, 349 F.2d 433, 439, 146 USPQ 479, 483 (CCPA 1965). Also, since Suzuki discloses both -COO- and -OCO- internal ester configurations (col. 2, lines 44-47), the declaration does not provide a comparison with the closest prior art. *See In re Baxter Travenol Labs.*, 952 F.2d 388, 392, 21 USPQ2d 1281, 1285 (Fed. Cir. 1991); *De Blauwe*, 736 F.2d at 705, 222 USPQ at 196.

Third, although the comparison of Suzuki's compound in Experiment 2 and appellants' compound in Experiment 4 shows that appellants' claimed compound, but not Suzuki's compound, has a tristable S*(3) phase upon heating, appellants' specification (pages 29-31) shows that a Suzuki compound having the same terminal ester as that in Experiment 2, but having an internal ester which is the reverse of that in this

experiment, has a tristable S*(3) phase upon heating. Thus, the evidence of record taken as a whole does not show that a compound within the scope of Suzuki, which has an external ester which is the reverse of that of the compound in Experiment 4 of the declaration, has no tristable S*(3) phase upon heating.

Fourth, the comparisons in the declaration are not commensurate in scope with appellants' claims. Only compounds with an R_1 having 8 or 10 carbon atoms and an R_2 having 6 carbon atoms are used in the comparisons, whereas appellants' claims encompass R_1 having 5-18 carbon atoms and R_2 having 6-16 carbon atoms, and Suzuki discloses R_1 having 1-20 carbon atoms and R_2 having 4-14 carbon atoms (col. 2, lines 34-44). *See Grasselli*, 713 F.2d at 743, 218 USPQ at 778; *Clemens*, 622 F.2d at 1035, 206 USPQ at 296. Appellants provide no explanation as to why the great number of compounds encompassed by appellant's claims would behave as a class in the same manner as the particular compounds tested. *See Lindner*, 457 F.2d at 508, 173 USPQ at 358; *Susi*, 440 F.2d at 445-46, 169 USPQ at

426.

Appellants argue that *In re Carabateas*, 357 F.2d 998, 149 USPQ 44 (CCPA 1966), indicates that a claimed reverse ester can be found nonobvious (brief, page 7). Based on the particular facts in *Carabateas*, the court found that the evidence was sufficient to show unexpected results. *See Carabateas*, 357 F.2d at 1000-01, 149 USPQ at 46. In the present case, however, as discussed above, the evidence is insufficient for showing unexpected results.

For the above reasons, we conclude, based on the preponderance of the evidence and argument in the record, that appellants' claimed invention would have been obvious to one of ordinary skill in the art within the meaning of 35 U.S.C. § 103.

DECISION

The rejection of claims 1 and 2 under 35 U.S.C. § 103 as being unpatentable over Suzuki is reversed. A new ground of rejection has been entered under the provisions of 37 CFR § 1.196(b).

This decision contains a new ground of rejection pursuant to 37 CFR § 1.196(b)(amended effective Dec. 1, 1997, by final rule notice, 62 Fed. Reg. 53,131, 53,197 (Oct. 10, 1997), 1203 Off. Gaz. Pat. & Trademark Office 63, 122 (Oct. 21, 1997)). 37 CFR § 1.196(b) provides that, "A new ground of rejection shall not be considered final for purposes of judicial review."

37 CFR § 1.196(b) also provides that the appellant, WITHIN TWO MONTHS FROM THE DATE OF THE DECISION, must exercise one of the following two options with respect to the new ground of rejection to avoid termination of proceedings (§ 1.197(c)) as to the rejected claims:

> (1) Submit an appropriate amendment of the claims so rejected or a showing of facts relating to the claims so rejected, or both, and have the matter reconsidered by the examiner, in which event the application will be remanded to the examiner. . . .
>
> (2) Request that the application be reheard under § 1.197(b) by the Board of Patent Appeals and Interferences upon the same record. . . .

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

REVERSED

37 CFR § 1.196(b)

MARY F. DOWNEY	)	
Administrative Patent Judge	)	
	)	
	)	
	)	
CHARLES F. WARREN	)	BOARD OF PATENT
Administrative Patent Judge	)	APPEALS AND
	)	INTERFERENCES
	)	
	)	
TERRY J. OWENS	)	
Administrative Patent Judge	)	

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APPENDIX

ferroelectric effect in S*(3) phase.

optically active center, and which exhibits optically

atoms; Y represents -CO- or -OC-; and * indicates an

atoms; R^S represents an alkyl group of 6 - 18 carbon

wherein R^L represents an alkyl group of 2 - 18 carbon

.... [I]

represented by the formula [I]:

1. A liquid crystal compound which is